COMMENTARY

Lecture Capture Is the New Standard of Practice in Pharmacy Education

Paul Fina, PharmD,a,b Tatjana Petrova, PhD,a Jeremy Hughes, PharmD, EdD,a

a Chicago State University, College of Pharmacy, Chicago, Illinois
b VA Center for Medication Safety, National Clozapine Coordinating Center, Hines, Illinois
Submitted December 15, 2021; accepted April 8, 2022; published February 2023.

The desire and need for remote access to education dramatically increased during the COVID-19 pandemic. As higher education struggles to find its “new normal,” pharmacy programs have begun to review changes and approaches to decide which should be continued. This Commentary advocates that the use of lecture capture as an instructional delivery strategy, is no longer just a supplement to learning, but is now a standard of practice in health professions education. Lecture capture creates equity for students by providing additional opportunities to review material. Students may be balancing schoolwork with a job, caring for their children, or fulfilling other obligations. Lecture capture allows students to acquire information at lower levels of Bloom’s taxonomy at a time that fits into their schedule, at a pace appropriate for them, and in a method that may better suit their learning needs. Students entering pharmacy school at this time have learned from audio/video media (eg, YouTube, Ted Talks, podcasts) and nontraditional educational competitors (eg, Khan Academy, Coursera, MasterClass). Students have become accustomed to learning via media technology and regularly do so in their everyday lives. Students desire lecture capture as it provides an opportunity to review unclear, complicated, or missed concepts as part of the studying process. Though its use is flexible, like any tool, lecture capture should not be used for all situations. Benefits and disadvantages of lecture capture for students, faculty, and institutions are described herein.

Keywords: lecture capture, recording, pedagogy

INTRODUCTION

Pedagogy and educational technology have evolved, impacting both higher education and health professions education. Lecture-based learning has been modified so that the expectation is that active-learning activities are included, and lecture-based learning may be entirely removed from the classroom when educators use pedagogy, such as team-based learning or flipped classrooms, which may use lecture recordings.1,2 Adopting this new pedagogy is facilitated by educational technology, such as learning management systems (LMSs), audio/video recording resources, and interactive classroom devices (eg, clickers).2 Cultural pressures, such as the availability and integration of portable technology, rapid access to information, social media use, and shifts in the norms of virtual interactions in daily activities, have also contributed to a shift in pharmacy education.3 Most recently, both the desire and need for remote access to education dramatically increased during the COVID-19 pandemic, and it is only a question of which changes will remain in the future. The Academy’s response included applying the concepts of design thinking to implement and test ideas to meet changed needs. There was a rapid shift to remote, asynchronous, and hybrid learning environments, which were implemented in a less-than optimal manner.4 As we continued to move through the pandemic, programs began to review changes and approaches that should be continued in the short and long-term future.

Lecture capture, the process of recording a lecture for a future use, is a method that was adopted by many in academic pharmacy during the pandemic. As lecture capture is not well-defined in health professions education literature, the authors propose the definition “Creation of a recording for student learning using audio, video, written, or any combination of the three media formats.”5 Lecture capture follows a six-step process and is likely different for each individual incorporating it: planning/preparation; lecture capture recording; processing/editing; posting for student use; use by students; and lecture capture archiving. Some of these steps may not occur, may not occur in this order, and may not occur within a predetermined time span. Faculty will perform lecture capture at different times and in different environments as some will record an in-person lecture, and some faculty will record a lecture
they capture in their office without students present. However, lecture capture is performed, educators use it for several purposes that can be beneficial to students, faculty members, and the program. These include desired shifts in student engagement and performance resulting from flexible use of class time, which allows for modified instructional design, active learning, and learner centric approaches.\textsuperscript{6,7} In large part due to widespread use of lecture capture during the pandemic, students and faculty now recognize and appreciate the value of lecture capture. This commentary advocates that the use of lecture capture as an instructional delivery strategy is no longer just a supplement to learning but is now a standard of practice in health professions education.

DISCUSSION
Lecture Capture Promotes Equity in Learning

Traditionally, the expectations of health professions programs are for students to attend all classes, be on time, be attentive, submit work on time, and leave personal and family responsibilities outside of the classroom. However, the reality is that pharmacy students, like all college students, come from all walks of life, have different obligations and needs, and have different learning styles. Students may be balancing schoolwork with working to pay for rent or a mortgage, caring for a family member or their child/children, or fulfilling other obligations. Lecture capture gives students the opportunity to acquire information at lower levels of Bloom’s taxonomy at a time that fits into their schedule, at a pace appropriate for them, and in a method that may better suit their learning needs.\textsuperscript{8} Lecture capture also helps to level the playing field by increasing access for students in underserved and rural locations, as well as for learners with disabilities.\textsuperscript{9}

Educational technology is heavily incorporated in higher education, and maybe more importantly, media technology is firmly entrenched in society.\textsuperscript{10} These technologies and creation of content moves quickly, so it is important for academia to remain agile in the same space to best serve students. Students entering pharmacy school at this time have learned via a number of different methods, including distance learning, which impacted all students during the COVID-19 pandemic. Additionally, the amount of time spent learning from audio/video media (eg, YouTube, Ted Talks, podcasts) and nontraditional educational media competitors (eg, Khan Academy, Coursera, MasterClass), has increased significantly.\textsuperscript{11} Students have become accustomed to learning via media technology and regularly do so in their everyday lives. They are used to having the option to watch/listen to content at 1.5x speed, having the flexibility of learning on their own schedule, and being able to readily look up information online.\textsuperscript{12} The student entering pharmacy school is different today than students from five or 10 years ago. Higher education and the pharmacy Academy need to evolve to maintain a competitive advantage and to provide what current PharmD applicants and students want.\textsuperscript{13}

Stakeholders Find Lecture Capture Beneficial

Students appreciate that lecture capture provides an opportunity to review unclear, complicated, or missed concepts as part of the study process.\textsuperscript{5,8,14} Lecture capture facilitates studying by allowing students to navigate to specific content areas, modify playback speed, and repeat the content.\textsuperscript{12} Students rarely use lecture capture as an alternative to attending class, recognizing the potential impact of pop quizzes and other in-class assignments.\textsuperscript{15} Positive effects include an improved quality of notes, improved understanding of lecture content, better retention of information delivered in lectures, and enhanced learning.\textsuperscript{5,16} Additional benefits for students include independent resolution of questions on content, being able to control the pace of their own learning, and being able to pay more attention in class.\textsuperscript{5,17} Although students enjoy face-to-face interactions the most, hybrid learning modalities where students can learn at home and also in the classroom help students retain material.\textsuperscript{12,16} For active learning, such as case-based learning, the classroom environment is still the preferred method for students.

Faculty also recognize the value of lecture capture as a response to student demand for supplemental learning tools, as a resource for students who miss class, and as a flexible alternative when circumstances do not permit on-campus instruction.\textsuperscript{7,8,18} Faculty members who chose to not use lecture capture suggest it is not an appropriate mode of delivery, express concerns about class attendance, and voice concerns about student performance.\textsuperscript{5,17} However, faculty members may also benefit from use of lecture capture. The authors propose that the use of lecture capture for team-based learning or flipped classrooms may be more engaging in the classroom for faculty and allow for improved relationships with students due to increased time spent in direct interactions.\textsuperscript{6}

Benefits and Risks Associated With Lecture Capture

Meeting student wants and needs can improve student satisfaction and thus the sentiment of alumni, an important objective for all institutions. Lecture capture resources can be made available to newly graduated alumni as resources when they are studying for the North American Pharmacist Licensure Examination and Multistate Pharmacy Jurisprudence Examination. Institutions can also use lecture capture
as a back-up plan or as a component of a quality improvement program. A lecture capture lecture can be used in place of a live lecture when faculty have another obligation or when emergencies occur. Lastly, a faculty member can receive feedback via an observation of their captured lecture, which can be viewed at any time by the reviewer, thereby incorporating quality improvement into the teaching and lecture capture process.

Like any other tool, lecture capture should not be used for all situations. Lecture capture should be carefully considered during course design, development, and delivery, as there are also advantages to in person learning. Learning via traditional lecture, whether live or via lecture capture, is at a low level of Bloom’s taxonomy and does not involve interaction with peers. Health care professionals need to work on developing higher-level cognitive skills, such as critical thinking; interpersonal skills, such as conflict resolution; and self-management skills, such as self-awareness and restraint. Lecture capture may not be appropriate when immediate feedback would be beneficial to students’ understanding. For example, it is impossible for students to express an opinion about a patient case or controversial topics when a unidirectional lecture delivery modality such as lecture capture is used for learning. Additionally, some learners may struggle when asked to only use content provided via lecture capture. For example, they may have difficulty paying attention in a non-classroom setting and may miss having the amount of direct interaction with faculty that they would have in a face-to-face setting. Lastly, lecture capture is inappropriate as a direct replacement for live lectures when the school is not a distance learning campus and students’ expectations are for face-to-face interactions.

Facilitating Changing Practice

Employee engagement and faculty resistance to change are serious factors that institutions must address when adopting lecture capture. To address the possible barrier of the sunk cost fallacy, past experiences and investments in maintaining an in-classroom lecture environment are not good justifications for continued use of existing models of pedagogy. Approaches from change management theory, including Kotter’s 8-steps, Bridges’ transition model, and the Kübler-Ross change curve, can be employed to help both faculty and students adapt. Change is always hard, and it starts with an open discussion among stakeholders. Expanding beyond traditional lecture-based learning can be contentious as the methodology has been entrenched since the
beginning of academia. Change is needed at multiple levels and not just by the faculty.

Pressure from accrediting bodies and shifts in expectations of best practice from professional associations can serve as change catalysts. Accreditation standards and guidance surrounding best practices of lecture capture could identify: optimal length of lecture capture; when live versus asynchronous recordings should be used; what kind of permissions should be included for downloading lecture capture to use elsewhere (eg, accessibility and intellectual property protection); informal methods of sharing best practices (eg, AACP forums); best methods for posting lecture capture given various conditions (eg, LMS or YouTube); and ethical and equitable use of LC following death or departure of faculty.

Institutions can also facilitate change in several ways. Providing specific guidance in the form of policies, procedures, or guidelines for faculty and staff can define expectations and what is appropriate or not appropriate at the institution. If more system wide change will be instituted, training on lecture capture and tools to perform lecture capture should also be provided. Faculty will need to fully engage in all stages of the change process. This includes actively participating in any discussion on lecture capture, contributing to Academy/institutional guidance, engaging in training and research, and incorporating LC best practices in their teaching.

CONCLUSION

Research and institutional practice have focused on developing traditional lecture-based learning and active-learning infused lecture-based learning. Higher education is deeply rooted in these methods of teaching and extensive work has been done in these areas. Nevertheless, now is the time to fully embrace other methods of pedagogy like lecture capture that better address the needs and circumstances of today’s pharmacy students.20

The ivory tower of academia is notoriously slow to change, but the best time to prepare for change is before it is needed, and the second-best time is now. While this Commentary is based on the authors’ knowledge of, experience with, and opinions about the use of lecture capture, formal guidelines are crucial for broader implementation of this pedagogical approach in pharmacy education.

REFERENCES

7. Banerjee S. To capture the research landscape of lecture capture (eg, LMS or YouTube); and ethical and equitable use of LC following death or departure of faculty. Am J Pharm Educ. 2013;77(4):75. doi:10.5688/ajpe77475
